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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/065,252	09/28/2002	Wayne Westerman	FWPA5	2130

27417 7590 05/17/2005

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EXAMINER

SHENG, TOM V

ART UNIT	PAPER NUMBER
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2673

DATE MAILED: 05/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/065,252

Applicant(s)

WESTERMAN ET AL.

Examiner

Tom V Sheng

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 March 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-6 and 8-14 is/are rejected.
- 7) ☒ Claim(s) 2,7 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 3-6 and 8-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ure (US 6,107,997) in view of Leu et al. (US 6,084,576) and Bisset et al. (US 5,825,352).

As for claim 1, Ure teaches waiting for multiple fingers to touch a surface apparatus (waiting for a single or multiple touch at a virtual keyboard/mouse 909; see fig. 9 and 14-17; column 11, line 54 through column 12, line 8);

classifying the combination of fingers that initially touch the surface as a particular chord (with a multiple touch, a keyboard operation is started; specifically a chord of two-finger combination is determined from the touch; see figures 6 and 7; column 8, line 10 through column 9, line 49);

measuring the geometric arrangement of the fingers (conforms to the geometric arrangements of two fingers are shown in fig. 7 and is sensed by touch pad shown in fig. 8);

generating function or command signal to a host computer (from the keyboard operation, an output signal corresponding to the chord as detected is outputted); and

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restarting the above steps after liftoff of all the fingers (liftoff of all the fingers is an inherent indication of completion of a particular chord input, and which is why the flow would return to the beginning after issue of output signal).

Ure does not teach testing whether this geometric arrangement matches that of a neutral, relaxed hand, or a hand whose fingers have been spread deliberately; if the finger arrangement tests neutral, selecting a neutral set of gesture functions or commands for the classified chord; if the finger arrangement tests spread, selecting a spread set of gesture functions or commands for the classified chord that are intuitively related to the neutral set. Further, Ure does not teach generating the function or command signals from the selected set in response to subsequent finger motions.

Leu teaches an ergonomic keyboard. In particular, Leu teaches the distinctions between a natural relaxing stretch position referred as home domain, an outward laterally stretched position referred as extended domain, and a fully laterally stretched position referred as maximum domain. Leu recommended using the home domain and the extended domain for key input by a finger (column 5, lines 24-38). One of ordinary skill, at the time of invention, would recognize that Ure's multiple two-finger combinations could be further classified according to whether the fingers are in the home domain or the extended domain. Doing so has the natural advantage of grouping commonly used keys such as alphabets/letters into the home domain, which is the most relaxed position, and the other keys into the extended domain, so that the fingers need to be stretched only as required.

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Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Leu into Ure, such that the two-finger combinations would be classified into two sets of symbol inputs according to the relative degree of stretch of the fingers. Naturally, a testing for respective classes would be needed for each input.

Still, Ure as modified by Leu does not teach that inputs as being gesture functions or commands nor the generation of the gesture functions or commands from the selected set in response to subsequent finger motions.

Bisset teaches recognizing movements of multiple fingers on a touch pad in order to identify as cursor movement or control function (column 11, line 56 through column 12, line 14). Moreover, as illustrated between any two consecutive figures as shown in fig. 7A-7F, each control function corresponds to a specific sequence of movements and is gesture (column 12, line 15 through column 13, line 58). Thus, the control functions are gesture and geometric arrangement based and in response to subsequent finger motions. Some of the gesture based control functions (i.e. gesture functions or commands) that involve multiple fingers are drag function (using two fingers) and scroll function (using three fingers). One of ordinary skill in the art, at the time of the invention, would recognize that by further incorporating Bisset gestures functions into modified Ure's symbols input classification, additional functions with respect to a symbol entered, such as dragging the symbol to a particular location on the display, would enhance the functionality of Ure's virtual keyboard/mouse 909.

Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to incorporate Bisset's gestures functions into modified Ure's virtual keyboard/mouse, thus allowing further manipulation of the symbol(s) entered in addition to just symbol/text entry function (column 4, lines 30-39)

As for claims 3 and 4, Ure as modified teaches use of combination of fingers on a touch pad to provide both mouse and text functions such as point, drag, scroll, and click (see column 2, line 56 through column 3, line 15 of Bisset).

As for claims 5 and 6, text search and replace functions, text styling functions, and text alignment functions are well known in text editing software such as Microsoft Word and the mere addition to text input and mouse button functions as taught by Ure modified by Leu and Bisset simply serves to further enhance the functions implementable by a single hand gesture.

As for claims 8-14, Ure as modified teaches use of multi-fingers in translations that are applicable in both mouse operations such as pointing and dragging as discussed above and text operations such as text selection or moving a text cursor, which would be apparently part of text operations as analyzed above for claims 5 and 6.

Allowable Subject Matter

3. Claims 2 and 7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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4. The following is a statement of reasons for the indication of allowable subject matter: none of the prior arts of record teaches computing total mismatch between touching fingers and neutral working template and total mismatch between touching fingers and spread working template and classifying the finger arrangement according to the comparison between the two mismatches, as cited in claim 2. Further, by defining templates of contact coordinates for the typical neutral and maximally spread cases, this helps to further differentiate between neutral and spread finger arrangements. None of the prior arts of record teaches sliding two, three, and four fingers in an adjacent or spreading manner to correspond to various text manipulating and editing commands, as cited, of claim 7.

Response to Arguments

5. Applicant's arguments with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tom V Sheng whose telephone number is (571) 272-7684. The examiner can normally be reached on 9:00am - 6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on (571) 272-7681. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tom Sheng
May 5, 2005



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